SURGERY.

29. *General conclusions relative to the symptoms, effects and treatment of injuries of the Head.*—The following observations by Mr. R. Alcock, are extracted from his lectures delivered at the Sydenham school of Medicine, and are worthy of attention. They refer to a class of injuries, the most complicated and interesting in surgery, and are founded upon a very enlarged experience, the author having been deputy inspector of hospitals with the auxiliary forces in Portugal and Spain.

"1. The most common injury of the head is *concussion*; more powerful in its effects, more universally pervading the fibre of the brain and the system generally, than any other. There can be no injury to the head from violence without it: it therefore complicates all; or, more naturally and simply, this may be considered the one great and elementary form of injury, to which any or all the others must, if they exist, be superadded, when violence has been suffered.

2. "Compression, ramollissement, lesion of structure may exist without concussion; yet so generally are they the consequences of a jar or shock, and so constantly do they require to be discovered and treated, not as simply or singly existing diseases, but as complications of the first great injury, concussion, that the study of them in this form is absolutely necessary to a due appreciation of the effects of injuries of the head. Otherwise we should find, that when we knew the effects of compression, simply, we had yet to learn to distinguish them when supervening on concussion.

"3. The effects resulting from injuries of the head are of several kinds as well as degrees; and as the most practical mode of classing them, they have been referred to the three nervous systems or centres through the medium of which they are manifested.

"*a.* The cerebral system, and such portion of the spinal as contributes to cerebral sensation, perception, and motion.

"*b.* The excito-motory or true spinal system, including all manifestations of spinal reflex actions; among which are respiration, deglutition, vomiting, convulsions, the action of the sphincters.

"*c.* The great sympathetic—the nervous system of organic life, as it was termed by Bichat, governing secretion and nutrition throughout the body, and probably, in a great measure, circulation through the heart's action.

"Lesion of one of these does not necessarily imply, *in primo loco*, injury of any other; although disturbed functions in all generally follow as a secondary consequence. Injuries of the head and spine sometimes, in the first instance, affect chiefly or solely the first; in other instances the second; in others, again all three.

"If one be affected only, and subsequently others, they are generally implicated in the order in which I have placed them. But if the circulation be considered as chiefly referable to the sympathetic, then this will often be the second in order.

"*In proportion as one or more, or as one or the other, of these nervous centres are chiefly implicated, will the nature of the effects and the character of the symptoms developed be varied.*

"The functions of the first or cerebral order may be impaired or apparently annihilated, without, for a considerable period, any serious disturbance of the two following. Any one cerebral function may in like manner be affected, exalted, impaired, or annihilated, without much disturbance of any other part of the same system.

"In some rare cases, this may also take place when the second order is the seat of injury—as in tetanus and hydrophobia; generally, however, the cerebral and sympathetic are speedily implicated.

"The third, when seriously injured, involves the other two generally promptly and fatally.

"The order in which these are implicated in injuries of the head, has no cer-

tain reference, and furnishes but an imperfect scale of degree of injury. A wound of the cerebrum, capable in a few days of destroying life, may leave, until all the vital powers are ebbing, the excito-motory and sympathetic systems unaffected.

"When these are involved, however, as a result of cerebral injury, they always imply a grave and dangerous lesion.

"4. Severity and succession of effects are better guides for diagnosis and treatment in these injuries, than even the accurate knowledge of their exact nature or actual extent, which can rarely be attained. With effects we have to struggle, and they afford valuable diagnostics for the prognosis and the treatment; for by these effects, rather than by the nature of the injury in the majority of cases, must the prognosis be formed. In these cases, it will be found that similar effects succeeding an injury, more generally give similar ultimate results than can be predicated from any similarity of injuries.

"5. It is important to know that similar kinds and degrees of injury, as far as any material alteration or lesion can define them, give very variable effects. The one recovered with some permanent irritability of fibre, the other died; proving the impossibility of predicating, *from any knowledge of the original injury*, what form the sequences will assume. Although even the ultimate effects of concussion are various, there is one form much the most common, and that is permanent irritability of nervous or cerebral fibre.

"6. It is a great error to consider concussion to have ceased its action and influence on the brain and system generally with returning consciousness, sensation, and voluntary motion. The cessation of coma does not mark the termination of the effects of concussion, neither does that injury in a severe degree always produce coma in the first moments.

"A lethargic state, coming on subsequent to the first moments of injury, is very frequent in cases of cuncussion; supervening probably a few hours after the blow or shock. These have hitherto been held to be instances of extravasation, effusion, &c. Their sudden relief by bleeding proves this to be impossible. If these symptoms arise from compression, as I believe they often do, it is the pressure of fluid within the cerebral vessels, acting on a debilitated fibre, which may have lost its power of resistance.

"7. The usual effect of concussion on pupil and pulse is to dilate the one, depress and impede the other. The pulse and the respiration frequently both present the same character.

"Dilatation of pupil; drowsiness; laboured pulse; slightly impeded breathing; in milder forms, vomiting—in these consist the chief features of a moderate degree of concussion, not violently affecting either the excito-motory or the ganglionic system; its effects confined chiefly to the head, which does not always happen, even in slighter degrees of injury.

"Thus concussion, followed beyond its first evidence, presents a group of symptoms and effects in the following order:

"In reference to the cerebral system:

"1. Coma, or depressed action.

"2. Febrile, or exalted action.

"3. Irritability or cerebral fibre.

"To give a clear impression of some of the more important of what may be termed "*Subsequent or secondary effects of concussion*," I will class them in the following order. The most common course of concussion, in various degrees of intensity, has been fully described. These subdivisions may now, therefore, be considered in the light of important deviations from the more usual course, but all distinctly referable to CONCUSSION as a first cause, and unless so classed and considered, calculated to lead to serious errors of diagnosis and practice.

"*a.* From concussion will occasionally result, without any intervening coma, symptoms of irritation or inflammation, attended or not with late developed stupor.

"*b.* In some cases the converse of this may be observed; that is, from the

stupor of concussion no reaction is ever manifest, but the patient gradually recovers from a prolonged lethargy, having never given signs of inflammation or irritability of brain.

"*c.* Again, in other cases, even during the first comatose stage, particularly if the case be complicated by lesion, or the lodgment of a foreign body, an exalted and high inflammatory action supervenes. Either inflammation, or irritation only may become developed, the pupil contracting during the coma, and the pulse beating sharply.

"*d.* Even if a shock or concussion give rise but to a temporary or imperfect state of coma, its subsequent effect may be a quickly succeeding disorganisation of the brain; and this may be either partial or general.

e. "Concussion in other cases seems to cause death by rendering the brain unfit for its functions, without any obvious alteration of structure.

"This effect, the most extraordinary of the whole list, perhaps, is curiously and beautifully exemplified by the occasional effects of concussion on the eye. I have, for instance, observed in that organ the following as distinct consequences of a shock:—

"1. Disorganization of the whole of the contents of the sclerotic.

"2. Partial alteration of structure.

"3. Total destruction of sight; entire loss of visual function, without any trace of disease or perceptible alteration of structure.

"4. Partial destruction, amounting only to impaired vision.

"Mark how perfectly they correspond with the effects observed in the brain; and the confirmation thus furnished by analogy of the accuracy of my views on this subject is the more gratifying to me, that the facts came under my observation second in order, not originating, but explaining that which carefully recorded symptoms and appearances had previously suggested to me as taking place in the brain.

"*f.* Concussion sometimes gives rise, in addition to the diseased action in the head, to others which I shall term "*dispersed effects*," or disease in distant parts. Under this head I place, for instance, abscesses of sudden formation, in the lungs, liver, joints, &c.

"*g.* Under violent concussion neither pupil nor pulse in some cases will give any indication of irritation or inflammatory action, however violently and fatally developed in the brain or its membranes. The pupil will continue fixed and widely dilated, the pulse, slow, laboured, and even feeble.

"8. Compression rarely manifests the same controlling power over the pupils as that which I have attributed to concussion. Lesion occasionally does produce the same effect.

"Compression does not, even when great and extensive, invariably produce dilated pupil. Neither does it necessarily induce stertor.

"Compression may even produce coma of the most complete kind, and yet the pupil remain unaffected and perfectly natural. This I have never seen in violent concussion.

"9. The continued labouring character and slowness of the pulse is one of the best signs of compression—pressure not necessarily from effused or extravasated fluid—it may be from pressure within the vessels; and this is easily determined by depletion, which in extravasation, &c. affords no decided relief; while in the latter form of compression its good effect is prompt and indisputable.

"10. Lesion, unless very extensive, produces less impression on the different nervous centres, and in general fewer symptoms and effects than any of the elementary forms of injury enumerated. It assumes more the form and character of a local disease. The severity and variety of effects seem rather to depend on the degree of attending concussion or compression than on lesion.

"11. Ramollissement will give all the symptoms both of concussion and compression.

"12. An intermittent pulse seems to depend not on any degree of injury to the head, but on some peculiar irritation. It is not a common symptom either

of concussion, lesion, or compression, and but rarely exists in concussion alone, I have occasionally observed it in complicated cases.

"Having now defined and described, as far as limited time will permit, the elementary forms of injuries of the head, and classified the numerous and complicated effects to which they give rise, I proceed to the treatment, which is comparatively simple; the difficulty lies in distinguishing the true character of the case. Unless the coma be of such death-like influence that it seems likely to extinguish life, in which case I would administer diffusible stimuli, I have invariably seen the best effects, and not seldom immediate relief from free depletion. And if the pulse present some volume with its sluggish character, this is the treatment I have successfully adopted in a very large number of cases; nor have I ever seen any injury result from the practice thus guarded.

"Next to depletion I consider the free action of the bowels important; and for this purpose, if there be a state of coma, a purgative enema should be thrown up. If deglutition be possible, the patient should swallow a full dose of jalap and calomel, or calomel and colocynth, followed by a solution of the sulphate of magnesia, and small doses of tartarized antimony.

"Next in importance, I place cold applications, and a shaven head. There was but one order in the militaty hospitals under my direction—viz. to shave the whole head within an hour of admission in all cases of head injuries, as the surgeon then both sees what he is about, and is enabled to make all applications to the head efficient.

"The skin and the kidneys assist much in the antiphlogistic measures, and their action should be promoted; diaphoretics and diuretics combined at intervals with the purgatives. By these derivative or subdepletory measures, the surgeon will much diminish the necessity for large and frequent bleeding; but this must be resorted to without hesitation whenever the inflammatory action is manifested in the brain, or its membrane; and in many cases when stupor comes on after a partial recovery—℥xiii, ℥xviii, or 24 oz., at a time, and repeated the same day if the symptoms do not indicate subdued action. When the pulse changes its character from slow and languid beats, 40 to 60 per minute, to a sharp, thrilly, and more rapid character, generally the dilated or natural pupil will become strongly contracted; these are your chief signs for free depletion; the same actions may exist without being manifest by these or any other symptoms. But when these are present, bleed, and bleed freely; purge and sweat the patient, or death is certain.

"There is, however, an exception to this otherwise very general rule of practice, viz. when the subject of injury has been of a drunken and debauched character; when, in fact the wound is followed by an attack of what may be termed, traumatic delirium tremens. And these cases require much discrimination to be distinguished, since complicated by a severe injury they do not offer the same broad and legible indications of the true nature of the constitutional disturbance. It behoves you to watch carefully and avoid an error which would in all probability be fatal. Notwithstanding the two contrary indications afforded by severe injury to the head on the one hand, and the delirium tremens on the other, you must not think of bleeding. On the contrary, stimuli, and even brandy, combined with opium and doses of calomel, will offer the best chances of safety, perilous as the treatment may seem.

With respect to depletion generally in head injuries, I must also beg you to bear in mind that large and repeated abstractions of blood have a direct tendency to induce irritability of fibre, which is a very general and unfortunate result of concussion, independent of any treatment which may be adopted. Never bleed, therefore, without a definite object and distinct indication, and bleed neither more largely nor more frequently than seems absolutely required. Stimulating the secreting organs, so as to produce increased discharge, will often answer all the purpose of repeated bleedings, and without their disastrous effects.

"If any puffiness of scalp or burrowing of matter take place, one, two, or

three free incisions to the bone generally stop the mischief, and they should be made without any unnecessary delay or hesitation.

In the long-continued irritability of cerebral fibre, bringing on pain of the head, giddiness, &c. on exposure to the sun, or on the application of any other stimulus, I have in some cases found a mild mercurial course perceptibly diminish it.—*London Med. Gazette*, July, 1839.

30. *Dislocation of the Femur in the Ischiatic Notch with fracture.* Charles Thornhill Esq. relates in the *London Medical Gazette*, (July, 1836,) a case of this in which he succeeded in reducing the dislocation after the lapse of six weeks.

The patient was a collier ætat. about 40. Whilst at work in a mine, a large mass of the roof fell upon him and fractured his thigh at the upper third of the bone, and bruising him much about the hip. The fracture was dressed and after the swelling around the hip had subsided, the dislocation was detected. Six weeks after the accident, the fracture having then united Mr. T. proceeded to the reduction: "A door with a blanket thrown thereon was placed upon the bed, and two staples having been driven into the opposite walls, the patient was instructed to recline upon the door on his left side, with the right shoulder drawn one-third backwards. This latter precaution was deemed necessary, in order to prevent his being drawn forwards upon his face by the first application of the extension. A well-padded band was then passed between the thighs close upon the perinæum, and this was affixed to the staple at the back of the patient, when the pulleys being secured to the opposite staple, as well as to the rings of the knee-belt which had been previously applied, extension was made in the usual manner in a line directly across the middle of the uninjured thigh. After this had been steadily and perseveringly employed for upwards of half an hour, without occasioning much relaxation in the muscles, it was thought advisable to administer the antimonii potassio-tartras, in doses of a grain, repeated at intervals of a few minutes, until nausea should be fully obtained. When three or four doses had been given, the head of the bone began to advance towards the acetabulum, and I could distinctly feel it disengaging itself from its recently formed attachments. At this stage of the operation, my brother having passed a strong band under the upper part of the thigh, got upon the door, and fastening the loop of the band over his own shoulders at the same time that he pressed firmly with his hands upon the crista of the ilium, endeavoured to lift up the head of the bone, while Mr. Roberts forcibly rotated the limb outwards by grasping it both at the knee and ankle joints. Whilst this was going on, one of the straps that secured the band between the thighs suddenly gave way; but as we had another band in readiness, it was applied over the other without loss of time, and without much reducing the amount of extension already obtained. As soon as this was properly adjusted, similar efforts were again resorted to, and continued for some time without success. By this he had taken about ten grains of the tartar emetic, and the system began to be somewhat under its influence, as was manifested by the increasing pallor of the skin, and the comparative looseness and tremor of the muscles in general; but while we were employed in augmenting the extension, another difficulty presented itself, in consequence of the knee-strap gliding over the surface of the patella, although the precaution had been adopted throughout to keep the limb at right angles. This was replaced as speedily as possible, and our efforts were renewed as assiduously as before. After the patient had taken the twelfth dose of the potassio-tartrate he became very restless, and it was evident that nansea had been duly produced. He now implored us most earnestly to desist from the further use of means; and as extension had been carried as far as was justifiable, it was resolved, before we abandoned the case as hopeless, that another and a last attempt should be made. For this purpose my brother endeavoured once more to elevate the bone, while Mr. Roberts performed rotation outwards, as already described; and after these efforts had continued for two or three minutes, the head of the femur was forced into its socket with an audible crash, the poor fellow having been under treatment for an hour and three-

quarters. On relaxing the pulleys and disengaging the apparatus, the limb was found to be of nearly equal length with the other; but the difference that existed might be wholly attributable to the effects of the fracture.

The empl. thuris comp., spread upon linen, was applied over the joint, and the bandage ordinarily used in such cases was passed round the waist, and closely bound over the unsound hip. The patient was then placed in bed, and ordered to remain there for the space of a fortnight. Before the expiration of this time, however, he got up, and went out of doors upon crutches, though as yet he was unable to bear weight upon the leg.

About this period he came up to my surgery to be dressed. On examining the hip there was considerable enlargement and difigurement, arising from the thickened state of the muscles and integuments, and also from a large mass of callus which had been deposited about the joint; and to so great an extent had coagulable lymph been thrown out, that it was extremely difficult to trace the characteristic prominences of the bony structures. Indeed, in no case that had ever fallen under my observation do I remember having previously witnessed such an immense deposit in the neighbourhood of the acetabulum: notwithstanding, the different motions of the limb, as far as they could be performed, were perfectly natural, and the man seemed highly pleased with the progress he had already made. The mercurial plaster was now substituted for the empl. thuris comp., and this was renewed every week for about a month or five weeks. But as absorption had taken place only to a trifling extent, and as the motion of the limb continued to be in a measure impeded by the callous mass, the size of a nutmeg of the iodine ointment, in the following proportions, was directed to be rubbed every night round the joint: ℞. potassa hydriod.; tinct. iodinæ, ää. ʒj; ung. cetacei, ℥j. M.

On the 10th of May he walked on crutches to Dudley, a distance of five miles, where he was seen by Mr. Roberts, and also Mr. Badley, who concurred in the propriety of continuing the iodine preparation for a few weeks longer.

At the time of the present report (May 29th) he represents himself as rapidly gaining strength and power of mobility in the joint. He is able to bear his entire weight on the injured side, and he talks of substituting a stick for the use of the crutches. There has been considerable absorption of the morbid deposit, though it is still sufficient to occasion a slight disfigurement about the hip. Much of this callous mass, it is to be feared, will remain permanently; but this will not be of any great consequence, as even now it does not appear to interfere materially with the motions of the limb. These have already become very extensive; but some months must necessarily elapse before they are perfectly restored to their pristine condition.

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31. *On the Division of Tendons, and on their Mode of Union.*—Benj. Phillips, Esq., in a paper communicated to the *London Med. Gaz.* (July, 1839,) makes the following interesting observations on this subject.

"The dictum of Hippocrates, 'that tendinous structures cannot be cut with impunity,' held almost exclusive sway over men's minds up to nearly the end of the last century. Some persons, among whom were Paul Barberette, Meekren, and Abraham Titsingh, however, denied their sensibility, and maintained that wounds of these structures produced no general reaction. Others, among whom were Paré and Petit, believed that such wounds were very dangerous, producing spasm and great general reaction. Others, such as Boerhaave, Cowper, Platner, who, adopting the opinion of Galen, that tendons arose from nerves, taught that injuries of tendons are as serious as those of nerves, producing tetanus and other spasmodic affections. It was the apprehension so entertained, which, it would seem, prevented Marianus from using the knife, in making way for the stone to be extracted from the bladder, and induced him to prefer tearing those parts to a sufficient extent by means of his dilators. Indeed, except in the case of a few bold innovators, such as Tulpius (1641), Roonhuysen, who cut the tendon of the sterno-mastoid successfully for the cure of a case of wry neck (1674), Blasius (1677), Meekren (1780), and Ten Haaf (1791), tendinous

structures have been respected up to very late times; for the momentary resuscitation of the principle by Thilenius in 1784, by Michaelis in 1811, and by Sartorius in 1812, did not cause the adoption of the system.

"Petrini, in his memoir, 'Sull' insensibilita ed irritabilita,' published in 1735, seems first to have demonstrated that tendons and aponeuroses might be 'dissected' without fear; but certainly the prevalent opinion was opposed to him; and the memoir of Jacques Fr. Chat, seems to have been an epitome of the opinions of the time on the subject. He concludes by saying, 'On doit donc éviter la section des tendons,' (1742.)

"No very clear conviction seemed to exist on men's minds with regard to the possibility of union in divided tendons until the time of Titsingh, who said that wounds of tendons were united by the interposition of callus, which is organised, and by which they are cured in a few days. Stalpart Van der Weil (1777) also states that they are united by callus, like bone. Duchanoy (1775) and Bezoet (1765) state that at first a nodosity is distinguished, which soon acquires considerable consistency, and constitutes a firm bond of union.

"These opinions obtained more consistency when maintained by Moore, Prochaska, Gordon, Boyer, and Thompson, who stated that the fibres of regenerated tendons are not disposed parallel the one to the other; that they are less glistening; and that the cicatrix is thicker than the tendon. Murray (1787) said that he had seen divided tendons unite like muscles, by means of plastic lymph, which becomes organised and transformed into a very dense cellular tissue. Bichat, in speaking of union after section of the tendo Achillis, says, that from the two ends of a tendon a fibro-albuminous matter is exuded, which is gradually condensed, and unites one to the other; that this matter is endowed with a sort of 'ductility,' which allows of its elongation and extension.

"No man sought more fairly and completely to work out this part of the subject than Delpech. To satisfy himself of the principle upon which he ought to act, he made many experiments upon brute animals; and the knowledge so acquired he successfully applied to man; and it is to me inconceivable how his merits, as connected with this subject, have been so greatly overlooked. Some years afterwards, Stromeyer, in conjunction with Günther, a veterinary surgeon of Hanover, went over the same ground with Delpech; he applied the principle successfully to man, and his success caused its general adoption.

"The mode of union was carefully observed by Duval (1837), who says, 'As soon as the tendon is cut, the extremities are separated by muscular retraction. Some hours after, the surrounding cellular tissue is inflamed; twenty-four hours after, this tissue is bathed in serosity, and looks œdematous. The skin participates in this turgescence. Sometimes we find a mass of red matter, not unlike a clot of blood, between the ends of the tendon. From the cellular tissue at the circumference of the extremities of the tendons, filaments set out towards a fibrinous matter, which, however, is not always met with; but the cellular tissue is always inflamed during the first seven or eight days. Thirty-six hours after the section, the substance between the extremities exists in the form of a ligamentous membrane, much more developed superiorly than inferiorly. The third and fourth day this intermediate tissue acquires much thickness, and becomes, as it were, fleshy, dark red internally, whitish at its circumference. From the sixth to the eighth day it offers the same form with the tendon: the tendinous organisation of this substance proceeds from the exterior towards the interior, by the condensation of cellular laminæ. From the fifteenth to the twentieth day this organisation is complete, its red colour no longer exists, and this new-formed tissue is as solid and as resistant as the tendon itself, from which it differs only in colour, which is less white; and sometimes by a little less thickness.' We may complete this part of the subject by a short quotation from the commentary of Ammon on the same subject:—'The tissue thus formed fills, by the end of a fortnight, the same functions as a healthy tendon, with this exception, motion is a little more difficult, in consequence of the new substance being a little less elastic than the old, and also in consequence of its adhering, o a certain extent, to the surrounding structures.'

"One important question still remains to be discussed. We have ascertained that a divided tendon will unite firmly, and that, at the end of a certain time, the medium of union can scarcely be distinguished from the original structure. We believe that, in fractured bones, separation of the fractured extremities cannot be carried beyond a certain point without involving the danger of non-union; what the extent may be it is not easy to define. How far the extremities of tendons may be separated with impunity, is an important question in our subject.

If the section of the tendo Achillis be made, it will unite by means of a very fine dense medium, even though the distance between the cut extremities be considerable. Molinelli states, in the Memoirs of the Academy of Bologna, three cases, which are good evidence of this fact. In one, the tendon had been cut at two fingers' breadth from the calcaneum; the superior portion was retracted, and the inferior portion, with the exception of two lines, was removed; yet the two portions were perfectly united without shortening. Clement, of Avignon, according to Heister, saw a case in which the separation of the two ends, in a similar case, was above two inches, and yet the union was firm and complete. But, as might be expected, there is a limit beyond which this separation is imprudent. What that limit is, in man, I do not know; but, in dogs, about three inches is the maximum point, at which the development of a proper bond of union seems to be practicable; at least, in all the cases I have known, it has failed when the separation has extended to four inches.

"This is a point of great importance in deciding whether extension should be promptly and firmly employed after the section of the tendons or not. Some persons recommend the immediate application of the principle; and, further, that it should be energetically employed. If the reasoning could be applied to the human subject which is derived from experiments on brute animals, it is clear that it would be imprudent to produce a separation between the cut extremities to the extent of four inches; that it is not easy to determine how much short of that, separation might be employed with impunity. I have known a separation to the extent of nearly two inches to be made in the human subject, immediately after the section of the tendo Achillis, without any inconvenience; I have known a separation of four inches in a dog, without union.

"In this state of the question, I think a middle course best. Some men do not employ extension for many days—until, in fact, the medium of union is organised; others apply extension at once. In the one case, the medium may not readily yield to extension; in the other, the medium may not connect the cut extremities."

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32. *Case of Section of the Ham-String Tendons for the Cure of Contracted Knee-Joint.*—Benj. Phillips, Surgeon to the Marylebone Infirmary, relates, in the *Lond. Med. Gaz.*, (July, 1839,) the case of a female 29 years of age, general health good, in whom he divided the ham-string tendon for the cure of contracted knee-joint. Five years previously she had suffered much from rheumatism, which affected principally the knee-joints and the hands. From this affection she suffered for two years and a half, during which the leg of either side became more and more flexed upon the thigh, and extension was impossible. A great variety of mechanical means were used, for the purpose of endeavouring to procure extension, but without the slightest amendment. She then proceeded to Bath, underwent the usual course of treatment there, combined with attempts to extend the limbs by means of certain modifications of Amesbury's apparatus, but returned home, no better than she was when she left it. On her return, she was placed under the care of Mr. Crellin, of St. John's Wood, whose treatment dissipated the remaining traces of rheumatism; but the contraction of the ham-string tendons remained unchanged. During the succeeding two years and a half, her general health continued good, and she experienced no further attacks of rheumatic pain.

In January, 1839, Mr. Crellin consulted Mr. Phillips in the case. "I found her," says Mr. P. "almost bed-ridden, the right leg presenting with the thigh an angle of

55 degrees; beyond that point extension could not be made, but flexion might be proceeded with until the heel very nearly came in contact with the buttock. The left leg was flexed to a much less extent than the right, though the heel of that is two inches and a half from the ground: it was, however, three inches and a half longer than the right. The joint appeared on either side to be unaffected, and no thickening was apparent. At the first view it seemed as if the patella were slightly displaced laterally; but this was more apparent than real, for, in the leg upon which I operated, the patella is now perfectly natural.

"When the hand was placed upon the posterior part of the thigh, from the tuberosity of the ischium, the muscles were tense and hard, and, in the ham, the tendons were like extended cords.

"Nine months ago, when the case was first mentioned to me, I had recently seen an account of an operation performed at Antwerp, for the purpose of overcoming the resistance offered by the flexor muscles; and, when I consulted with Mr. Crellin, I at once recommended a somewhat similar operation in this case, and, as the patient's health was good, and as suspense would not probably improve her condition, the operation was performed on the succeeding day.

"The Antwerp case will be found detailed at the conclusion of the paper.

"I saw possible inconveniences from performing the operation as practised by Lutens, of Antwerp, and I saw no difficulty which could attend the section, made by means of the smallest external opening which would admit of the introduction of a proper instrument—such as is used in the section of the tendo Achillis.

"Accordingly, on the 10th of January, in the presence of Messrs. Crellin and M'Ilree, I effected, without much pain or difficulty, a section of the tendons of the semi-tendinosus and the biceps, which allowed of an immediate extension to the amount of between two and three inches, and caused the disappearance of the tension at the back of the thigh. The operation was performed in the following way:—The patient lay, as nearly as she could, upon the face, and extension was made as far as possible, so as to produce a very marked cord-like tension of the ham-string tendon. A very straight blunt-pointed knife, such as is used by Bouvier in the section of the tendo Achillis, was glided on its flat under the tendon of the biceps, between it and the bone; its cutting edge was then directed upon the tendon, a sawing motion impressed upon it, and the knife soon passed through it, without injuring the integuments. It immediately retracted, to the extent of an inch. A similar course was taken with the semi-tendinosus. No blood was lost, and strapping was employed to bring together the lips of the two small incisions. All went on very satisfactorily, and I proposed to begin extension on the third day; but, in preparing for this, I found I had still resistance to overcome: the semi-membranosus would not yield, and I at once decided to make a similar section of its tendons. The same means were employed as before, but the different portions of this muscle are not so easily cut; however, I continued to incise so long as I found this muscle offering resistance. This was soon accomplished, with comparatively very little suffering; its section allowed of our increasing extension by another inch. All went on very well, and, in two days more, extension was commenced, with a modification of Amesbury's apparatus. For some days, the matter seemed to proceed propitiously, but then she complained much of pain on the internal surface of the tuberosity of the tibia, at the point of insertion of the cut tendons; this was subdued by small doses of morphia, and the screw was very sparingly used. When the screw had been used for some days, to the amount of a single evolution daily, she complained of pain at the patella; this was borne for a few days, but at last increased in severity, though there was no tumefaction nor much heat about the joint. I now divided the knee-cap of the instrument into two portions; one of which was applied above, the other below, the patella. Gradually all pain and discomfort ceased, and soon I had the very great comfort of finding that the turns of the screw were nearly exhausted—that extension was almost complete. In a few days. I removed the instrument, and discovered that there was scarcely any tendency to contraction; that the muscles were capable of extend-

ing and flexing the leg at will, though at first very slowly. Every day the power increased; every day the extension was more perfect; and as much more rapidly produced as she bore more weight upon the affected limb. At this time the foot of the affected leg, and particularly the tarsal portion of it, became the seat of subacute rheumatism, which still affects and prevents her from using it; but happily there is no disposition in the knee-joint to relapse into its former condition.

"Some time since, I obtained a Thèse sustained at Paris, by M. Duval, brother of the orthopedist of that capital; in which are detailed seven cases upon which his brother had operated.

"The first was treated in October, 1837. The patient was a boy of eleven, who, at the age of five, suffered from phlegmonous inflammation around the knee-joint, with abscesses, which were followed by sinuses, which continued open during the next four years. Motion at the joint was obscure. On the 10th of October, he divided the tendons of the biceps, the semi-tendinosus, and membranosus muscles. At the end of three weeks, the leg was extended on the thigh, and the boy was able to walk without crutches.

"His second patient was a boy of twelve. At five, he hurt the left knee. The injury was followed by inflammation and abscess, which continued to affect the neighbourhood of the joint for five years and a half, when the sore cicatrized. The leg was at that time so flexed upon the thigh, that a straight line, drawn from the middle of the posterior part of the thigh to the heel, was removed nearly six inches from the ham. The tendons of the biceps, the semi-membranosus and tendinosus, were cut through, and in six weeks he was enabled to walk pretty well.

"The third patient was six years old. At two years and a half, he had symptoms of meningitis, which paralysed the left side of the body. The paralysis of the lower extremity was accompanied by contraction of the ham-string tendons. The same tendons were cut as in the former cases. At the end of twenty days, complete extension could be made, and, at the end of seventy-three days, he could extend it himself; but the paralysis interfered with progression.

"The fourth case was that of a boy, who, at two years old, had a large boil in the ham; suppurative inflammation extended around the joint; fourteen or fifteen abscesses had been opened during the succeeding five years. At the expiration of this time all the abscesses closed, and the articulation became sensibly smaller and less painful; but the leg was flexed, so as to describe with the thigh a right angle. A section of the same tendons as in the former cases was made, and allowed of immediate extension to the amount of two inches. An extending apparatus was employed, but eight months was required to restore it to its natural direction.

"The fifth case was that of a young woman of twenty, who, seven months and a half before, had great itching at the knee. It swelled, and presented ampullæ almost like those in superficial burns. The vesicles disappeared in a single night, but the swelling increased. Leeches, blisters, and caustics were applied with benefit, but a certain portion of tumefaction persisted. During the whole of this time, flexion had been more and more marked, and, at the time of the operation, the limb described a right angle. A section of the biceps and tendinosus was made; an extending apparatus was employed, and, in thirty-two days, she began to walk.

"The sixth was a man, aged thirty-five, who had paralysis of the right inferior extremity; this was accompanied by considerable flexion of the leg on the thigh, and the ham-string tendons were tense. In this case, the impression produced on M. Duval's mind was, that the contractions depended upon the muscles of the calf, which are also flexors of the thigh upon the leg. A section of the tendo Achillis was made, and, in six weeks, the cure was complete.

"The last case was that of a patient aged twenty. Three years ago, he fell on the right knee, which became inflamed; and, while he kept his bed, the leg became flexed; it remained so many months, and, when he got up, the toe alone rested on the ground. Many means were ineffectually tried to restore the limb

to its natural condition. The three tendons of the ham were like tense cords; they were cut, and at once the limb could be extended to the amount of two inches; extension was employed, and, in twenty-five days, the limb was perfectly straight, and the patient could walk on it. Three or four days after the operation, acute inflammation was developed at the knee; twenty-five leeches and emollient cataplasms were applied, and, in eight days, it was dissipated.

"In the month of February, 1837, M. Lutens divided the ham-string tendons at the hospital at Antwerp. The case was that of a man named Brilet, a sailor, who, in July, fell from near the mast-head to the deck of a ship, the back of his right thigh coming in contact with the jib-boom; the contusion was great, and the extravasation of blood considerable. In October, he was placed under the care of M. L.; he found no trace of inflammation remaining; but the back of the thigh, from the ischium to the knee, felt as if cords were tightly drawn along it. The leg flexed upon the thigh, and extension impossible. In the attempt to make extension, the tendons became extremely tense, and no plan which was adopted produced any relaxation. If he tried to walk, the toe rested alone on the ground, and was turned outwards.

"The articulations of the hip and the knee were free from disease. All means of procuring extension failing, M. L. consulted with M. Gougeé and M. Decondeé, who at first thought nothing could be done to relieve this condition. Afterwards, M. Decondeé concluded with M. L. that it might be well to make an incision through one or other of the muscles near the ischium. Two months elapsed, when M. L. decided to make an incision on either side of the knee. A bistoury upon its flat was glided under the semi-tendinosus tendon, about two inches above its inferior attachment; the edge was then directed upon the tendon, which, with the aponeurosis and skin, was at once divided. On the outer side, the sheath of the biceps was exposed, and the muscle cut through. The next day all hardness at the back of the thigh had disappeared, and the leg could be made perfectly straight, and an immoveable bandage was applied to maintain extension. He now moved about in the ward, and on the thirtieth day the wounds were dressed with dry lint; cicatrization proceeded slowly. Three months afterwards, he could walk pretty well, and without a stick, some little difficulty was experienced even then in flexing the leg upon the thigh, but still it could be accomplished.

"Once the operation has been performed by Dieffenbach, but I am not in possession of the particulars of the case; once by Mr. Liston, without success; once by Dr. Little, with very partial success.

"I know of no other case in which the operation has been performed; but those which I have detailed present a sufficient variety of causes of contraction; the operation has not been attended by any unpleasant consequences, and the results have been extremely favourable.

"Towards the autumn of the present year, I propose to make a section of the tendons in the left ham of my patient; and I shall probably lay before the profession the result of that operation."

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33. *Ætiology of Club-feet.*—M. Guerin, one of the most celebrated orthopedists of Europe, recently presented to the Royal Academy of Sciences, a memoir the main object of which is to prove that the immediate cause of club-foot, is muscular contraction, and that this contraction is always connected with, and is doubtless owing to a disorder of the faculties. He has examined an immense number of deformed and monstrous fœtuses, and he has thus been able, he assures us, to follow, step by step, the relation between the muscular contractions, and the existence of disease in the cerebro-spinal axis—from a mere spot of morbid alteration of one point to the complete destruction of the brain and spinal-marrow.

The primary seat of the mischief is, therefore, to be found in a disease of the nervous centres; a spasmodic and permanent shortening of the muscles, whose nerves are derived from the diseased part, is the consequence; and in this manner a deformity, more or less considerable, is gradually induced and established.

Sometimes the convulsive affection has been general, affecting almost every part of the body; and then we find that not only are the limbs contracted, but that the features of the face also are more or less distorted, that the eyes squint, and that perhaps the shape of the cranium is deformed, or that the two sides of the body are unequally developed.

In other cases—and these are by far the most numerous—the muscular contraction has been quite local, and limited to the muscles of one part, such as of one leg or foot. That the deformity is really owing to the cause which we have now mentioned, is made evident by an attentive examination of a case of club-foot. We find that the muscles of the affected leg, especially the *gastrocnemii*, have undergone a more or less complete fibrous transformation—the natural consequence of the continued and exaggerated contraction to which they have been subjected.

In the living subject, the calf of the leg is found to be flattened, shortened and very prominent, with hard resisting edges; the toes are separated from each other; and the instep is much arched and drawn to one side or to the other. In short, we perceive an exact relation between the characters and direction of the deformed part and the degree of the contracted, tense and *salliant* state of the muscles of the leg. Lastly, the deformity may in many instances be removed almost instantaneously by dividing the tendons of the contracted muscles.

When the retraction of the muscles has continued for a length of time, they are always observed to become more or less wasted or atrophied, compared with the other muscles of the limb. There is, therefore, a degree of *arrested development* to be taken into account in the ætiology of such deformities, as club-feet, &c. There are, in short, three elements of morbid action to be admitted in analyzing the causes of these congenital irregularities—the spasmodic retraction of the muscles, a certain degree of paralysis, and, lastly, a consecutive arrest of development in the affected muscles.

M. Guerin sums up the results of his numerous observations in the following propositions:

1. Congenital club-foot is the effect of a convulsive contraction of the muscles of the leg and foot.

2. In the absence of general or direct traces of the convulsive affection, we may almost always discover some immediate characters, which indicate the nature of the exciting cause.

3. There are three constituent elements in the retraction of the muscles of the part—viz., the immediate shortening of their substance and tendons, a certain degree of paralysis, and lastly a consecutive arrest in the development of the retracted muscular substance.

4. There exist no other causes of *genuine* congenital club-foot, than convulsive muscular retraction. The pressure of the parietes of the uterus on the fœtus appears indeed in some cases to produce a deformity of the limbs and feet, similar to, but not indentical with club-foot.—*Mémoires de l'Academie.*

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34. *Wound of the Heart.* By Dr. STEIFENSAND, of Crefield.—Wounds of the heart have always been accounted extremely dangerous; and although there are examples in which death followed upon penetrating wounds of the heart, only after a lapse of some days, or even weeks, yet in general such injuries are regarded as necessarily fatal.* Lately, however, doubts have arisen as to the necessarily mortal character of wounds of the heart, and cases are quoted in which cicatrices of the heart, or even foreign bodies lodged in its substance, were found after death. The followlng case is interesting, as it shows the continuance of the functions of the heart for some days after severe injury.

C. H., a young man, ætat. 20, was stabbed on the evening of the 16th of September, 1837, probably with a knife, by some person unknown. After receiving the wound, he walked about 100 paces, and then fell into the arms of

* See an interesting paper on this subject, by Dr. J. R. Coxe, in the No. of this Journal for August. 1829, p. 307.

his companions, exclaiming that he had been stabbed. He was carried to his house, about a mile distant, and a surgeon was immediately sent for. The wound was about an inch in length, situated on the right of and close to the sternum, between the third and fourth ribs, and running in an oblique direction downwards. It had ceased bleeding; a compress was applied, and some antiphlogistic medicine prescribed. For some days the wound appeared to be superficial, but the patient was always extremely restless, and much distressed by thirst. On the 20th, whilst at stool, there was a sudden hemorrhage from the wound, which was, for the moment, stopped by the application of a fresh compress, but returned repeatedly, so that the surgeon, who till now had not been apprehensive of danger, became alarmed, and called in Dr. Steifensand. On the afternoon of the 22d, Dr. S. found the patient lying on the back, pale, with no pulse, the extremities cold, and the respiration oppressed. The beat of the heart was audible on applying the ear to the chest, and was accompanied by a peculiar short metallic sound. Black blood flowed from the wound, and the quantity was increased by pressure on the walls of the thorax. The probe was arrested by the cartilages of the ribs, and the state of the patient did not warrant a more particular examination. The bandage was applied anew, and the patient recommended to remain as quiet as possible. The restlessness, however, still continued, and he died on the morning of the 23d.

On examining the body, the right cavity of the chest was found filled with dark fluid blood. The knife had traversed the cartilage of the fourth rib of the right side, had divided the mammary artery, and passed through the pericardium into the right auricle, near its junction with the ventricle. The wound of the pericardium was about three lines in extent, that of the auricle about two lines. The right lung was collapsed, and pressed upwards.

In general, wounds of the heart are not followed by immediate death. Ollivier has collected fifty-four cases of penetrating wounds of the heart, among which were twenty-nine of the right ventricle; and in these with the exception of two cases, death ensued between the fourth and twenty-eighth days. Twelve of the cases were wounds of the left ventricle, and these with the exception of three, which survived respectively forty-nine hours, three days, and ten days, proved immediately fatal. The greater frequency of wounds of the right ventricle depends evidently on its position, and the more sudden death in wounds of the left ventricle is owing to the difference of structure and function.—*B. & F. Med. Rev.* July, 1839, from Casper's *Wochenschrift*, No. 15, 1838.

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34. *Ivory Bougies*—Charriere, surgeons' instrument maker in Paris, has exhibited to the Academy bougies and other instruments, made of flexible ivory (ivory from which the calcareous matter has been extracted). They are according to the pattern of some bougies given to him by Dr. Juterbock, of Vienna. They serve the purpose completely of elastic gum instruments, and have the great advantage, that they may be made in a few days, whereas the preparation of caoutchouc instruments occupies several months. In a practical point of view, the ivory bougies have the advantage, that when they are dry, any desired bend or curvature may be given to them which is retained nothwithstanding their elasticity. The dryer they are on introduction the more they expand, without losing in durability and firmness.

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35. *Penetration of the skull and membranes of the brain by a nail—Suppuration under the bone—Trephine, cure*—By Samuel Cooper. Frederick Rudd, ætat. 12, admitted into the University College Hospital, March, 14, 1839. About three weeks prior to this date, a door fell on his head, and a nail which projected from it penetrated through the right parietal eminence. He was not completely stunned by the blow, merely experiencing a little giddiness. Around the wound it seems that an effusion of blood under the scalp ensued, producing a swelling of about the size of a pigeon's egg. The hair was cut off the part, a leech was applied, by the direction of the practitioner first called in, and some aperient

medicine given. For ten days after this he appeared to be well, playing and taking his food as usual.

About the eleventh day after the accident he began to lose his appetite, complained of pain in his head, and was sick. These were the first symptoms of mischief within the cranium. On the sixteenth day he became delirious; but this state subsided after the administration of a dose of jalap.

On his admission into the hospital, there was a small wound over the most prominent part of the parietal bone, of a size just sufficient to admit a quill. Around this the integuments were somewhat swollen and puffy, and from the wound itself some fœtid purulent matter exuded. It was found that a probe could be passed through the aperture in the skull, so as to touch the dura mater. Pulse 100; tongue white; skin hot; pupils dilated. Some stupor and drowsiness, but the intellects, in other respects, little affected. Frequent vomiting of bilious matter. Severe pain in the right side of the head, and across the forehead.

Three grs. of calomel every six hours. Scalp to be shaved, and evaporating lotion applied.

1 o'clock.—As the symptoms continued, and they indicated suppuration under the parietal bone, I made a crucial incision; and the flaps or angles were reflected, together with the pericranium. Some free hemorrhage followed, and nearly half a pint of blood was lost. A small oval aperture in the prominent part of the parietal bone was thus brought into view; and I noticed that some fœtid matter lay on the outside of the bone. A portion of the parietal bone, of the size of a shilling, was sawn out with the trephine, so as to expose the dura mater, which had a darkish colour, was thickened, and covered with a layer of purulent matter, which was sponged away. There was also some pus adhering to the inner table of the circle of bone taken out. Pus was also noticed to issue out of the small aperture made by the nail in the dura mater. This I did not see myself; but it is not improbable that pus lay under this part of the dura mater, because the pulsatory movements of the brain were not perceptible within the perforation made with the trephine.

Cold evaporating lotion applied, and a saline antimonial mixture ordered, with calomel gr. iij. every six hours.

Without entering into further details, I may state, that with the exception of a slight degree of diplopia, and a little sickness occasionally taking place after meals, and excited probably by the tartarized antimony, this case went on most favourably, and the boy has since been discharged perfectly cured, and with his vision in every respect right again.

Remarks.—It is a universally approved maxim in surgery, that whenever purulent matter lies close upon, or compresses, or disorders the functions of an important organ, a free outlet for such matter should be made without delay. The febrile symptoms—the headache; stupor, and dilated pupils—the puffy swelling of the scalp—the manner in which the skull had been struck and perforated by the nail—the probability even that the inner table might be splintered—all these considerations led me to believe that suppuration of the dura mater had occurred, and that unless a free outlet for the matter was promptly made, the boy would have little or no chance of recovery.

Here I deviated from the rule which is always inculcated in my lectures, that the trephine cannot often be applied with benefit while the patient retains the power of voluntary motion—retains his intellectual factulties—and is not afflicted with urgent symptoms of pressure. But exceptions to this maxim are recognized; and one of these is the case of suppuration of the membranes of the brain. You may also be justified in trephining what is termed a punctured fracture, to the nature of which this accident approximated, because you will find, though it did not happen in this instance, that, in the generality of cases, the inner table is splintered and depressed, and the early removal of such splinters is the best way of preventing dangerons consequences.—*London Med. Gaz.* May, 1839.

36. *Establishment of an Artificial Anus.*—At a late meeting of the Royal Academy of Medicine, M. Amussat communicated the following remarkable case:

"Mrs. D., 48 years of age, had long suffered under constipation, severe pain on going to stool, and hæmorrhage from the rectum; the bowels were evacuated only every seven or eight days. In the commencement of May last, Mrs. D. was treated by the author for a slight affection of the uterus, and was on the point of setting out for the country, when she was seized with obstinate constipation. Every remedy was now employed, but without avail. M. Amussat examined the rectum, but did not discover any obstacle in this part of the canal, nor any trace of fæcal matter. Frequent consultations were now held with MM. Brechet, Recamier, &c., and it was, at length, decided to have recourse to an operation, the patient being reduced almost to the last extremity. The comparative merits of the different modes of establishing an artificial anus were now discussed, and Callisen's plan, as modified by M. Amussat, was selected. The operation was performed on the 2d of June, in the following manner: The patient having been placed on her abdomen, the trunk elevated on pillows, a transverse incision was made at two inches above the crista ilii, and over the prominence which was evidently produced by the left lumbar colon. This incision extended from the common body of the sacro-lumbalis and longissimus dorsi muscles to the middle of the crista ilii. The superficial fascia, dorsal, and external oblique muscles, were next divided, in the same direction, and, layer by layer; the internal oblique and transverse were next divided, and by crucial incisions. A small arterial branch was now twisted, and a layer of fascia, divided by a crucial incision. This last exposed the fatty cellular tissue which lies immediately above the intestine; it was carefully removed by means of the curved scissars, and two ligatures were passed through the walls of the intestine, in order to keep it *in situ*, and prevent its retraction. The surgeon having distinctly recognised the colon *free to a considerable extent of peritoneal covering*, passed a trocar into the most prominent point of the intestine, on withdrawing which a quantity of gas and liquid fæces escaped. The patient immediately felt much relieved. A bistoury was now passed along the canula, and the opening of the intestine freely enlarged in various directions. An abundance of gas and fæces escaped, and when injections were thrown into the superior and inferior portions of the colon, three basinfuls of liquid fæces came away. The orifice of the intestine was attached to the anterior angle of the wound by four sutures.

"No ill effect whatever followed the operation. Its success was not compromised by the supervention of any local accident, and on the 18th of June last, that is, sixteen days after the operation, the patient was in the enjoyment of excellent health. Within the last few days she has resumed her ordinary occupation; and the fæces are discharged two or three times in the twenty-four hours."
—*Lancette Française*, June, 1839.

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37. *Traumatic Paralysis of the Arm.* By M. Blandin.—A soldier, 35 years of age, had the misfortune to dislocate his arm at the shoulder-joint: the luxation was easily reduced; but a complete paralysis of the entire extremity was the consequence. M. Blandin ordered frictions with a stimulating embrocation at first, and then successive blisters over the course of the brachial plexus, the vesicated surface to be dressed with a solution of strychnine. After the fifth blister, a manifest amendment ensued, and M. Blandin advised a repetition of the same treatment, which ultimately proved quite successful.

Remarks.—The paralysis of the arm, following an external injury, presents itself under several forms:

1. The lesion may have affected only the *circumflex* nerve of the deltoid muscle. When this is the case, the paralysis is limited to the shoulder-joint alone, and the patient cannot raise the arm, but all the other parts of the limb retain their normal integrity. This lesion may be the consequence of a direct injury of the joint, as a blow or a fall upon it. The most successful treatment of such cases consists in the use, after the immediate effects of the contusion

have been removed, of an embrocation composed of tincture of cantharides, ammonia, balsam of fioraventi and almond-oil,* to be rubbed night and morning upon the part. Sometimes, however, the paralysis resists this and every other remedy that can be devised.

2. The paralysis may be owing to a lesion of the brachial plexus in its sub-axillary portion, in consequence of the dislocated head of the humerus pressing upon it. When such is the case, the patient experiences a sharp pain at the time of the accident; and the pain is usually accompanied with a sensation of cold and formication in the limb, which has already become quite powerless. A treatment, similar to what we have recommended in the former instance, will often succeed in removing the complaint.

A copious eruption of painful pustules on the part, induced by the application of some strong liniment, seems to be often of great use in traumatic paralysis.

Most surgical readers are aware that the dislocation of the joint is extremely apt to recur, as long as the weakened state of the surrounding muscles continues.

3. The source of the traumatic paralysis of the arm is sometimes seated at the origin of the brachial nerves. The efforts to reduce a dislocated limb, if too violent, may cause a lesion of the roots of these nerves; and the consequence of this lesion may be a sort of rachidian apoplexy or a violent myelitis, which has on several occasions proved fatal. Works on military surgery record many cases of this lesion, arising from gun-shot contusions.

Even under such unfavourable circumstances, as those to which we have now alluded, the well-directed efforts of the surgeon have often succeeded in restoring the use of the limbs. If the use of stimulating embrocations and of blisters prove inefficacious, Baron Larrey very strongly recommends the repeated application of the moxa along the whole *trajet* of the affected nerves. The recent experience of M. Baudens at Algiers quite confirms the statements of the Baron.

The endermic use of strychnine at the same time affords us a *veritable richesse nouvelle* in the treatment of such cases. With respect to this powerful remedy it deserves to be noticed that, if the vesicated or ulcerated surface be covered with any coagulable lymph, there may be little or no effects produced by its application.—*Med. Chirurg. Rev.* from *La Lancette Française.*

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38. *Means of repressing Hemorrhage from Arteries.*—Prof. Macartney stated to the Medical Section of the British Association, at their recent meeting, that he had been induced to try the effects of metallic ligatures, from observing that such substances frequently remained in the body without exciting any uneasiness, whilst the ordinary ligature fails from the injury and consequent inflammation excited by it. On applying ligatures of leaden wire to the arteries of dogs, he found, after death, that they remained, *in situ*, without surrounding inflammation, or were removed by intestinal absorption, the arteries being impervious. The same results were observed when the experiment was made on the jugular vein of rabbits. An improvement was made by Mr. Weiss on the leaden ligature, by substituting soft metal wire, capable of being knotted.

Long since the late Prof. Physick suggested the use of leaden ligatures, and eleven years ago a number of experiments were tried with them by Dr. H. S. Levert, of Alabama, and an account of them was published in the No. of this Journal for May, 1829.

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39. *Local use of Iodine.*—Mr. John Davies, of Hertford, states that he has treated certain very troublesome ulcers which often form within the cavity of the mouth, attacking and destroying the tonsils and velum palati, with almost uniform success, by the tincture of iodine, daily applied with a brush all over the ulcerated parts.

In scrofulous swellings, he asserts that "the tincture of iodine applied over

* The late Baron Boyer was much in the habit of prescribing this formula:—R. Balsami fioraventi ℥iv.; tinctura lyttæ ℥ss.; liquor. ammoniæ dil. ℥ss.—Misce, fiat liniment.

the enlarged gland, will much more frequently cause a dispersion of the swelling than any other remedy. If resorted to before suppuration has actually commenced, and used with discretion, it will, in the majority of cases, check the swelling, and will ultimately promote the absorption of the morbid deposit. The same remarks will apply to these swellings as to common boils: even when suppuration is begun, before recourse is had to the tincture, or when it has taken place in spite of the tincture, still the application of the iodine is highly beneficial in limiting the extent of the abscess, thereby limiting the size of the scar which is to follow. Moreover, when the swelling has burst, an occasional touch of the remedy will be found materially to accelerate the cicatrization of the sore. Mr. D. has usually succeeded also in checking the progress of the ulceration in chilblain by two or three applications of the tincture of iodine. He applies the remedy, in its full strength, to the distance of some inches beyond the boundary of the inflammation, and repeats it daily for some time. He also directs the affected parts to be immersed every night in water as hot as the patient can bear. When the ulcers have assumed a healthy aspect, and the surrounding skin has lost its dark, limpid, unhealthy colour, the strength of the tincture may be reduced, and its application repeated every two or three days only, until the ulcers are healed. The ulcers should be painted over with the tincture each time of its application, and then dressed with any simple ointment, or, in preference, ointment containing some resinous gum.—*Lancet*, July 13, 1839.

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40. *Reduction of Hernia.*—Mr. Sawlins relates in the Lancet (6th July, 1839) a case of strangulated crural hernia, in which the taxis was tried for some time without success. He then introduced a stomach tube per anum its whole length, when a great quantity of confined air escaped, the tumour gradually relaxed, and shortly afterwards, on Mr. S. putting his hand upon it, the hernia was reduced.

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41. *Treatment of Lateral Deviation of the Spine, by division of the muscles of the back.*—M. Jules Guerin, editor of the "French Medical Gazette," who is, perhaps, the first authority in France on all points connected with deformities of the muscular or osseous system, has recently addressed the following letter to the Academy of Sciences, on a new mode of treating lateral deviations of the spinal column:—

I have the honour of acquainting the Academy with the first results of a new operation which I have performed in twelve instances, with success, on patients affected with lateral deviation of the spine. The operation consists in dividing certain muscles of the back and spinal column. Those which I have divided up to the present moment are the trapezius, rhomboideus, levator scapulæ, sacro-lumbalis, longissimus dorsi, and inter-transverse muscles.

I have already demonstrated, in another work, that the majority of the deformities which affect the joints depend on spasmodic muscular retraction, the result of some affection of the nervous centres, or of the nerves distributed to the muscles. This proposition, which has been shown to be generally applicable to deformities of the neck, spine, hip-joint, wrist, and ankle-joint, &c., naturally led to the deduction of two corollaries—

1. That the various species of deformity which affect the joints, &c. depend on muscular retraction, affecting variously the different muscles.

2. That the active treatment of each deformity should consist in the division of the muscles or tendons whose retraction gave rise to the specific deformity.

To obtain, however, the object in view, it was necessary to determine with precision the muscles on the retraction of which each deformity might depend; and, on the other hand, show, by actual experiment, that the theory was correct; or, in other words, cure the deformity by the section of the muscles supposed to be affected. This I have done in cases of wry neck, and in the different varieties of club-foot, and having extended the practice to lateral deviations of the spinal column, I have demonstrated the truth of the two following propositions:

1. The majority of lateral deviations of the spine depend on active muscular

retraction, and their anatomical varieties are but the expression of this retraction occurring in various degrees in the muscles of the spine and back.

2. The active treatment of this order of deformities should consist in dividing (underneath the skin) the several retracted muscles.

The operations which confirm my theory, were performed on individuals of both sexes, and of different ages; the youngest being thirteen, the oldest twenty-two years of age. The deviations had all arrived at the second or third degree, with torsions of the spine, and proportionate gibbosity. In some cases, a single section of the retracted muscles was sufficient for the cure; in others I was compelled to operate two or three times. In all cases I obtained immediately after the operation a well-marked degree of straightening of the spinal column, and in one case, that of a young man, twenty-one years of age, who had been treated mechanically for the last eighteen months, the deviation *immediately* disappeared after the division of the longissimus dorsi and corresponding inter-transverse muscles. In all the other cases I was enabled to complete the cure by mechanical means, and my success was constant. In the twelve operations which I have performed, no accident of any kind occurred; there was no hæmorrhage; but little pain; no fever; and in all except one, union of the wound by the first intention was obtained.—*Lancet* and *Gazétte Méd. de Paris*, 20th June, 1839.

42. *Efficacy of Iodide of Arsenic in the cure of Cancer.*—We transfer to our pages, from the *Lancet* of 31st Aug. 1839, the following account, by Dr. F. C. Crane, of a cure of a cancerous disease of the breast, though we must confess we repose little confidence in any means of cure of *genuine* cancer.

"M. H., ætat. 29, in the early part of November, 1838, presented herself to me with disease of the right breast; by her own account she had received a blow upon it from the clenched hand of a person in play, about eight or nine years ago, since which time she had occasionally experienced lancinating pains in it. Had been married nine years, but borne no children.

"In the last two years the breast had increased much in size, and become very sensitive to the touch, and pressure of clothes. She felt several distinct swellings in the breast, accompanied by severe shooting pains, extending to the arm-pit, and down the corresponding arm, affecting her constitutionally, making her weak, and extremely uneasy in her mind. Had shown the breast to several medical gentlemen, who told her it was cancerous disease. Had been advised to go into the public hospital to have the breast removed.

"The symptoms, on her presentation to me, were, sallow complexion, anxious countenance, much feverish heat, great sense of debility and declining strength, as though the constitution was giving way; loss of appetite, severe pains at the pit of the stomach, right breast much swollen, and tender to the touch; great increased heat, with several distinct internal tumours, varying from the size of a hazel-nut to that of a small walnut. The veins under the skin were knotty and thick, with a sensation of a stringy connection to the arm-pits, as though so many tense chords attached the swelled breast to the arm. The pain consisted of sharp lancinating throbs, shooting into the arm particularly, but affecting the chest generally; was a good deal subservient to the change of weather as respects pungency, but otherwise the pains were constant. Could not lie on her right side. The opposite breast was quite natural in size, appearance, and feel, but she occasionally experienced a lancinating pain in it, as though proceeding from the right breast.

"I felt fully convinced that this was a case of cancer in an advanced state, and hesitated not a moment in placing her under the treatment of the iodide of arsenic, as recommended by Dr. A. T. Thomson, in his paper read at the Medical Section of the British Association of Newcastle, in August, 1838, and reported in The Lancet.

"She was kept under the treatment steadily for nearly eight months, with gradual and eventually a perfect disappearance of the tumours and an absence of all pain, with generally improved health and strength. In the beginning of June, I considered her perfectly cured; she discontinued her medicine, and took

leave of me. I saw her again a few days ago, it being two months since she had taken any medicine whatever; she then expressed herself free from all pain in the breast, and is enjoying a better state of health than she ever recollects to have done previous to the treatment.

"I should observe that the dose of iodide of arsenic was an eighth of a grain, which was reduced to a twelfth, and gradually increased to a third of a grain, beyond which it could not be borne. However, in a case of inveterate common leprosy (lepra vulgaris) the same remedy was carried to the extent of one grain to the dose, with the most decided advantage and curative effects. Of this case I will forward to you at some future period an account, as also of a case, successfully treated, of extensive carcinomatous disease (open cancer), extending over the lower part of the abdomen (including part of the left iliac and inguinal regions); likewise a case of the removal of a large tumour with cyst of melanotic contents, both by the agency of the chloride of zinc."

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43. *On the apparent lengthening or shortening of the Limb in Injuries and diseases of the Hip.*—M. Sedillot, one of the surgeons of the Val-de-Grace Hospital at Paris, has published a very valuable practical paper on the difficulties of diagnosis in some cases of injury about the hip-joint, which we now propose to condense for the benefit of our readers.

He remarks—"the deviations of the pelvis, so common in diseases of the hip-joint, have been studied with great care of late years; and it is now admitted by all surgeons, that the *apparent* elongation of the limb on the affected side is generally owing to this cause (pelvic deviation), and not, as was formerly supposed, to a partial dislodgment of the head of the bone from its socket.

It has been also ascertained that the deviation is not always from above downwards, but is occasionally from below upwards; in which latter case the limb, instead of seeming to be elongated, appears to be shortened; although, in truth, its real length is not altered.

The attention of surgeons having been thus directed to these points, a great improvement in the history of hip-joint disease has been introduced of recent years; but the pelvic deviations, caused by a sudden blow or contusion upon the haunch, have been rather neglected; although they deserve particular consideration, seeing that such accidents are exceedingly apt to be mistaken either for fracture of the pelvis or of the cervix femoris, or for some dislocation of the hip-joint—mistakes which might prove most serious both to patient and surgeon.

The following case may be adduced in proof.

A young robust man fell upon his right haunch and hip, while coming down a flight of stairs: his right foot, being caught under the balustrade, prevented him from slipping down the stairs. He heard a sharp crack at the time, and he thought that he must have broken his limb. He rose, however, without assistance, but he could not rest the foot of the injured side upon the ground. A surgeon, who was immediately called to his assistance, finding that the limb was shortened and could not be moved but with difficulty, considered the case as one of dislocation of the hip upwards and outwards; extension was therefore employed for some time, but without any benefit.

Next day a consultation was held: the patient lay on his back; his right thigh was somewhat bent upon the pelvis, and drawn out or abducted from the other, so that the two knees were about a foot apart; the right leg was bent upon the thigh and drawn inwards, the heel being on a level with the middle of the left leg. While in this position the patient was free from pain; but he could not change it without great suffering.

Some of the medical men considered the accident to be a dislocation, while others regarded it as fracture of the neck of the thigh bone. It was therefore necessary to study the various symptoms with peculiar care.

When the two limbs were extended and brought together, the right one was found to be about an inch and a half shorter than the left one; no traction could bring the heels on a level with each other. When the knees were bent upon the thighs and brought together, the same degree of shortening of the right thigh

was observed, in whatever position the pelvis was attempted to be placed. The great trochanter on the right side was more elevated than that on the left; the superior and anterior spinous process of the right *os ilii* also was an inch and a half, or so, higher than the corresponding process on the other side. Wherever therefore the measurement was taken, the right limb always seemed to be shorter by upwards of an inch than its fellow. The distance of the right trochanter, however, from the crest of the *os ilii*, was observed to be uniformly the same, whatever was the position in which the limb was placed.

With respect to the direction of the foot on the injured side, it was, as already mentioned, rotated somewhat outwards; but the patient still retained the power of rolling it round and even inwards. He could also, while lying in bed, extend and raise the entire limb. The flexion of the thigh on the pelvis could not be carried beyond a right angle; adduction was difficult, but abduction was free and without uneasiness.* In the upright position, the patient rested rather on the heel than on the toes of the affected limb. The right shoulder was observed to be decidedly lower than its fellow, and the left side of the body was *legerement arqué*.

The patient experienced considerable pain when pressure was made over the hip-joint, and when the limb was rolled inwards and adducted; but very little when abducted. When he lay flat on his belly, the line of separation between the buttocks was sensibly inclined from right to left, and from below upwards.

Such were the most conspicuous features of the present case; and the question now came for consideration, what was the real nature of the injury present?

That the shortening of the limb was not owing to fracture of any part of the thigh-bone, M. Sedillot inferred from the circumstance that, although the foot on the injured side was drawn up about an inch and a half or so, and thus the limb *seemed* to be shorter than its fellow, the distance between the knee-joint and any point of the pelvis was exactly the same on both sides: this could not possibly be so, if one thigh were in reality shorter than the other. The distance too between the trochanters and the ant. sup. spinous processes of the ileum was steadily the same.

The free mobility of the limb also, although when left to itself it was turned outwards, and the power which the patient had of moving it in several directions were arguments against the idea of fracture of the cervix femoris being present. Still it should be well remembered by the surgical reader that, in some cases of such fracture, the patient has at first, and even for several days after the accident, retained the power of moving his limb, nay, has even walked for some distance, and yet the distinctive character of the injury—viz. shortening of the limb, rolling of the foot outwards, crepitation when the limb is extended and turned round, pain, &c.—have not made their appearance for a day or two. The explanation of such an occurrence is probably to be sought for in the circumstance that the fractured ends of the bone remained in contact at first, and that they were not separated until either the investing periosteum was torn, or the surrounding muscles had begun to contract more powerfully than before.

The age too of the patient, in the present case, naturally suggested a suspicion that the neck of the bone was *not* fractured. Of 225 cases of this accident, alluded to by Sir Astley Cooper, in two only was the age of the patient under fifty years.

M. Sedillot therefore felt satisfied that the case was not one of fracture. That it was not one of dislocation, he inferred from the circumstance of the distance between the great trochanter—although it was very projecting—and the crest of the ileum being the same on both sides, from the comparative facility of movement, more especially that of abduction, in the limb, from the trochanter not

* During these movements, a rubbing noise, *un bruit de frottement*, was audible; it was considered by some to be the crepitation of two broken surfaces, but M. Sedillot was of opinion that it was owing rather to the friction of fibrous surfaces one upon the other, or to slight articular shocks.

describing a larger arc than usual when the limb was rotated, and from the turning of the foot outwards.

Dwelling upon these and other considerations, he came to the conclusion that the case was merely one of severe contusion inducing a temporary lateral diviation of the pelvis. We have already stated that, whenever the hip is the seat of pain, the pelvis on the affected side very generally becomes elevated and inclined over somewhat to the opposite side, for the purpose no doubt of relieving the weight of the limb and of the pressure of the foot on the ground. The shortening of the limb in such a case is only apparent; and this fact may always be readily ascertained by means of measurement with a piece of tape, as already alluded to.

It is not improbable that, along with the contusion of the pelvis, there was also a sprain of the hip-joint; perhaps some of the ligamentous and muscular fibres around it partially torn, or even a portion of its articular cartilage broken off. When such accidents are present, the symptoms of the case will necessarily be more obscure, and will similate more exactly those of dislocation of, or fracture near to, the joint.

We have nothing to say as to the treatment of such injuries, as this must, as a matter of course, consist in rest, the application of leeches, and so forth. Should the deviation of the limb continue, after the immediate symptoms of the accident are removed, it may be necessary to resort to the use of mechanical means.—*Med. Chirurg. Rev.* from *L'Experience.*

44. *Lithotrity.*—M. Leroy D'Etioles has recently relieved the celebrated Parisian surgeon, M. Sanson, of stone, by this operation. It is said that there were great difficulties in the case, but they were happily surmounted. M. Sanson did not interrupt his consultations for a single day during the treatment. Three of the most eminent of the French surgeons, Dubois, Lisfranc, and Sanson, have thus given the strongest evidence in their power, of the value of this operation by submitting to it themselves, and giving a preference to it over lithotomy.

OPHTHALMOLOGY.

45. *New Instrument for the removal of a certain form of Capsular Cataract through the Sclerotica.*—Richard Middlemore, Esq., the distinguished surgeon to the Birmingham Eye Infirmary, has recently invented an ingenious instrument for the removal of capsular cataract through the sclerotica, where the opaque capsule remains after the absorption of the lens. This instrument consists of a fine, spear-shaped needle, the sides of which, very nearly at the point, are embraced by the branches of a fine pair of forceps, so as to form a perfectly smooth continuous instrument, admitting of very facile introduction through the tunics of the eye. The spear shaped needle is so contrived, as to be readily retracted after having punctured the sclerotica, and introduced the forceps; and the forceps open, by slightly pressing a button. When the opaque membrane—the capsular cataract—is seized, the mere closure of the forceps is considered to be sufficient to secure its removal; but it is very easy to increase the pressure, if necessary, to secure the more firm hold of the opaque membrane, it is the object of the operator to seize and withdraw.

The inventor has done us the honour to transmit a drawing of this instrument; which we regret came to hand too late, to allow of its being engraved for this No. of the "Journal."

The following extract from a letter, which accompanied the drawing, will fully explain the views of that gentleman, as to the application of his instrument:

"I will now describe, very briefly, one or two morbid conditions of the eye, to the cure of which my new instrument is adapted. You are aware that, if